

Certificate of Conformity

No. ESY 110886 0010 Rev. 00

Holder of Certificate: **Shenzhen Ates Power Technology Co.,Ltd**

1st Floor of Building 3 at Sector B and
3rd Floor of Building 9,Henglong Industrial Park, Shuitian
Baoan District
518724 Shenzhen
PEOPLE'S REPUBLIC OF CHINA

Product: **Converter
(Hybrid energy storage inverter)**

Model(s): **HPS30, HPS50, HPS100, HPS120, HPS150**

Parameters: See page 3-4

Applicable standards: EN 50549-1:2019/AC:2019
RfG:2016
NC RfG:2018
PTPIREE:2021

This Certificate of Conformity confirms the compliance with the above listed standards on a voluntary basis. It refers only to the sample submitted to TÜV SÜD Product Service GmbH and does not certify the quality or safety of the serial products. It was issued according to TÜV SÜD Product Service certification program Photovoltaics and Grid Integration. For details see: www.tuvsud.com/ps-cert

Test report no.: 64290233024401

Date, 2023-04-04



(Billy Qiu)

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Technical Certifier (Billy Qiu) appointed by Certification Body TÜV SÜD Product Service GmbH performed assessment of the products listed in this certification in the place: Ridlerstraße 65, 80339 Munich, Germany.

Test requirement	<p>The certification complies with the requirements of the following documents for Type B PGM installations:</p> <p>EN 50549-1:2019/AC:2019 Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network - Generating plants up to and including Type B</p> <p>RfG:2016 Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for the connection of generating units to the Network (OJ EU L 112/1 of 27.4.2016)</p> <p>NC RfG:2018 General applicability requirements resulting from EU commission regulation 2016/631 of of 14 April 2016 establishing a network code concerning the requirements for with regard to the connection of generating units to the grid (NC RfG-2018)- approved by the Decision of the President of the Energy Regulatory Office DRE.WOSE.7128.550.2.2018.ZJ dated 2 January 2019.</p> <p>PTPIREE:2021 Conditions and procedures for the use of certificates in the process of connecting modules generation modules to the power grid V1.2</p>
Type of certification programme	1(a) according to EN ISO/IEC 17067 Based on Photovoltaics and Grid Integration Certification Program (Revision 6,Dated 5 Dec 2021) for Poland Grid Code
Manufacturer & Address of manufacturing site	Shenzhen Ates Power Technology Co.,Ltd 1st Floor of Building 3 at Sector B and 3rd Floor of Building 9, Henglong Industrial Park, Shuitian, Baoan District 518724 Shenzhen, PEOPLE'S REPUBLIC OF CHINA
Software version	DSP software version: HPS30K_150K_HV3_SV4.1.14_APP50549, LCD software version: HPS30_150K_WEINVIEWScreen_HV1.0_SV1.1.3
Certificate expiry date	2028-04-03

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Parameters:

Model	HPS30	HPS50	HPS100	HPS120	HPS150
PV terminal parameters					
Vmax. PV	1000 Vd.c.	1000 Vd.c.	1000 Vd.c.	1000 Vd.c.	1000 Vd.c.
MPPT Voltage Range (full load)	480 Vd.c.~800 Vd.c.				
Max. continuous PV input current	90 Ad.c	136 Ad.c	230 Ad.c	327 Ad.c	409 Ad.c
Isc PV	100 Ad.c	170.5 Ad.c	333 Ad.c	400 Ad.c	500 Ad.c
Max. continuous PV input power	45000 W	55000 W	110000 W	132000 W	225000 W
Battery terminal parameter					
Battery type	Lithium iron phosphate battery				
Voltage range	352 Vd.c.~ 600 Vd.c.				
Maximum discharge current to grid	93 Ad.c.	156 Ad.c.	313 Ad.c.	374 Ad.c.	467 Ad.c.
Maximum charge current from grid to battery	85 Ad.c.	142 Ad.c.	284 Ad.c.	340 Ad.c.	426 Ad.c.
Maximum charge current	100 Ad.c.	150 Ad.c.	300 Ad.c.	350 Ad.c.	450 Ad.c.
Maximum discharge power to grid	33000 W	55000 W	110000 W	132000 W	165000 W
Maximum charge power from grid to battery	30000 W	50000 W	100000 W	120000 W	150000 W
Grid terminal parameter					
Rated voltage	230/400 Va.c., 3W+N+PE				
Rated frequency	50 Hz				
Rated current output to Grid	43 Aa.c.	72 Aa.c.	144 Aa.c.	173 Aa.c.	217 Aa.c.
Maximum continuous current output to Grid	47 Aa.c.	79 Aa.c.	158 Aa.c.	190 Aa.c.	238 Aa.c.
Rated active power output to Grid	30000 W	50000 W	100000 W	120000 W	150000 W
Maximum apparent power output to Grid	33000 VA	55000 VA	110000 VA	132000 VA	165000 VA
Power factor (Cos phi), adjustable	0.9 inductive(under-excited) to 0.9 capacitive(over-excited)				

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Scope of assessment and results

Clause of NfG	Requirement	Type A	Type B	Type C	Type D	AssessmentResult
Article 13.1 (a)	Frequency range	-	Y	-	-	Pass
Article 13.1 (b)	Ability to withstand the rate of change of frequency (RoCoF)	-	Y	-	-	Pass
Article 13.2	Limited frequency sensitive mode — overfrequency (LFSM-O)	-	Y	-	-	Pass
Article 13.4 & 13.5	Maximum power capability reduction with falling frequency	-	Y	-	-	Pass
Article 13.6	Remote ceasing active power	-	Y	-	-	Pass
Article 13.7	Automatic connection to the network	-	Y	-	-	Pass
Article 14.2	PGM remote control	-	Y	-	-	Pass
Article 14.3 & 16.3& 20.2 (b, c) & 20.3	Ability to withstand voltage dips for terminals below 110 kV & Introduction of fast current & Restore of active power after fault	-	Y	-	-	Pass